Studies Confirm Chirikof’s Squirrels are Ancient Residents

Scientists have unraveled another piece of Chirikof Island history. Carbon Dating and DNA studies illustrate the one of the Island’s few residents, the arctic ground squirrel (Urocitellus parryii) has been present for at least two millennia. Zooarchaeologist Catherine West of Boston University collaborated with Courtney Hofman of the University of Oklahoma and researchers at the Smithsonian’s Conversation Biology Institute. The Alutiiq Museum provided assistance with West’s fieldwork.

Chirikof is a pear-shaped piece of land at the far southern end of the Kodiak Archipelago. This remote island is just 11 miles long and about 100 miles from anywhere. Researchers have long speculated that the arctic ground squirrel, one Chirikof’s few mammals, arrived there in the historic era, an invader introduced by human visitors. But a 2005 archaeological survey of Chirikof by the Alutiiq Museum provided tantalizing evidence that squirrel population might be much older. Squirrel bones appeared to be part of ancient middens, garbage deposits left by much earlier residents.

West worked with Hofman to test this idea. They carbon dated carefully sampled squirrel bones and compared ancient and current Chirikof squirrel DNA. They also studied the bones for signs of human use. The results provide strong evidence that squirrels have been living on Chirikof for at least 2,000 years. Some of these bones show evidence of butchering by people, and the ancient bones contain DNA that very closely matches that of the current population. It appears that today’s squirrels are the descendants of those represented by the archaeological remains.

“The value in this study is its interdisciplinary, collaborative approach. As a team of archaeologists, geneticists, and wildlife managers, we used the ancient record to understand a contemporary environmental issue. Thanks to the animal bones left by Alutiiq people, we can learn how people interacted with Chirikof Island for thousands of years.

Why did people harvest these small rodents? Alutiiq Museum archaeologist Patrick Saltonstall, who assisted West on Chirikof, has an idea.
“I was impressed by the volume of squirrel remains in Chirikof middens. People harvested a lot of squirrels over many years. It makes sense though. The Alutiiq used squirrel pelts in clothing and it takes about sixty skins to make one parka! Catherine’s finds suggest the squirrel skin parka tradition is very old.”

In addition to shedding light on Alutiiq traditions, the archaeological finds provide important information for evaluating wildlife conservation efforts on Chirikof. The island is part of the Alaska Maritime National Wildlife Refuge, federal property managed by the US Fish & Wildlife Service. The Service is currently considering ways to restore Chirikof’s grassland habitats and their associated bird life. Understanding the long-standing place of the ground squirrels in this habitat may help to preserve these small, furry mammals as Chirikof residents.

More information on West and Hofman’s research can be found on line at these links:


https://nationalzoo.si.edu/center-for-conservation-genomics/news/scbi-researchers-use-ancient-dna-prove-arctic-ground-squirrel

The Alutiiq Museum is a non-profit organization dedicated to preserving and sharing the history and culture of the Alutiiq, an Alaska Native tribal people. Representatives of Kodiak Alutiiq organizations govern the museum with funding from charitable contributions, memberships, grants, contracts, and sales.

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Photo: Ground squirrel on Chirikof Island. Photograph by Patrick Saltonstall. Alutiiq Museum Archives.

Photo: Catherine West sifting site deposits to collect animal remains, Chirikof Island, 2013. Photo by Patrick Saltonstall, Alutiiq Museum Archives.